

**REMARKS**

In addition, the Examiner has rejected Claims 20, 27, and 31 under 35 U.S.C. § 112, second paragraph, as being indefinite. Examiner has also rejected Claims 18, 20, 22-24, and 32-34 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,394,999 to Williams et al. ("Williams"). In addition, the Examiner has also rejected Claims 25, 27, 29, 30, and 31 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,155,684 to Bille et al. ("Bille"). The Examiner has also rejected Claim 23 under 35 U.S.C. § 103(a) as being unpatentable over Williams in view of the article to Carlos E. Martinez et al, "Effect of Pupillary Dilation on Corneal Optical Aberrations After Photorefractive Keratectomy", Archives of Ophthalmology, Vol. 116, PP. 1053-1062 (August 1998) ("Martinez").

Independent Claims 18, 25, and 32 stand currently amended. Claim 31 stands currently amended to correct minor issues of form. Claims 19, 21, 26, and 28 stand previously canceled. Claims 32-34 were temporarily withdrawn pending Examiner's review of the above referenced claim amendments. However, in view of Examiner's rejection of Claims 32-34 as being anticipated by Williams, it is now Applicant's understanding that Claims 32-34 have been rejoined. Claims 1-17 stand previously canceled.

Claims 18, 20, 22-25, 27, and 29-34 are currently pending. The following remarks are considered by applicant to overcome each of the Examiner's outstanding rejections to current Claims 18, 20, 22-25, 27, and 29-34. An early Notice of Allowance is therefore requested.

**I. THE CURRENT OFFICE ACTION HAS BEEN IMPROPERLY MARKED AS FINAL**

The Examiner has marked the current Office Action as final. However, the Examiner has introduced a new reference (i.e., Bille) to reject Claims 25, 27, and 29-31. None of the previous amendments to Claims 25, 27, and 29-31 introduced any new claim limitations that would require a further search, and therefore warrant a second action final when the Examiner has introduced a new reference.

In fact, Claim 25 was previously amended to include the language from Claims 26 and 28, and Claims 26 and 28 were thus canceled. As such, Claim 25 contained **no**

amendments that actually added new limitations that would require Examiner to perform another search or introduce a new rejection. In addition, Claims 27, 29, and 30 only contained minor amendments to their form, which also added **no** new limitations that would require Examiner to perform another search or introduce a new rejection. Claim 31 wasn't even amended at all.

Thus, as can clearly be seen, **none** of Applicants prior amendments to Claims 25, 27, 29, or 30 were of such a nature to justify the Examiner classifying the current Office Action as final when a new rejection of these claims has been made.

Accordingly, Applicant respectfully asserts that the Examiner has **improperly** marked the current Office Action as final. Therefore, Applicant respectfully maintains that Examiner **must** withdraw the finality of the current Office Action.

## **II. THE CURRENT OFFICE ACTION IS CONTRADICTORY AND MUST BE REISSUED**

Even if Examiner is somehow justified in marking the current Office Action as final (which Applicant disputes), the current Office Action is filled with contradictions. This makes the rejections of the current Office Action unclear, and necessitates it's reissuance.

In particular, the Examiner has rejected Claims 20, 27, and 31 under 35 U.S.C. § 112, second paragraph, as being indefinite. However, in the body of the rejection, the Examiner refers to Claims 18, 25, 29, and 30. Based on the discrepancy between the cited rejection and it's actual discussion, it is unclear whether these rejections were intended to be made.

In addition, the Examiner rejects Claims 22-24 as being anticipated by Williams, but then never discusses Claim 23 in the body of the rejection. Further confusing this matter, Claims 23 is also rejected as being obvious over Williams in view of Martinez. Based on these discrepancies, it is unclear whether Claim 23 is intended to be rejected as being both anticipated and rendered obvious, or if the claim was just intended to be rejected as being obvious.

Further confusing the above matters, the Examiner has includes Claim 28 in the body of the anticipation rejection over Bille. However, Claim 28 was previously canceled,

and thus is no longer pending in this case. This makes it unclear whether Examiner (1) intended to refer to Claim 28 in the body of the rejection on page 6, (2) intended to refer to a claim other than Claim 28, or (3) if Examiner actually intended to refer to Claim 28. This also further confuses any interpretation of Examiner reference to Claims 18, 25, 29, and 30 in the body of the rejection of Claims 20, 27, and 31 under 35 U.S.C. § 112, second paragraph.

For all of the above reasons, the rejections of current Office Action are unclear and confusing. Accordingly, Applicant respectfully asserts that the current Office Action is wholly deficient, and therefore **must** be reissued.

### **III. SUMMARY OF RELEVANT LAW**

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. The determination of obviousness rests on whether the claimed invention as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. In determining obviousness, four factors should be weighed: (1) the scope and content of the prior art, (2) the differences between the art and the claims at issue, (3) the level of ordinary skill in the art, and (4) whatever objective evidence may be present. Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor. The Examiner carries the burden under 35 U.S.C. § 103 to establish a prima facie case of obviousness and must show that the references relied on teach or suggest all of the limitations of the claims.

### **IV. AMENDMENTS OF CLAIMS 18, 25, AND 32**

As an initial matter, Claims 18, 25, and 32 have all been amended to clarify that the treatment **results** in an aberration (an induced spherical aberration for Claims 18 and 25, and a fourth-order ocular aberration for Claim 32). These amendments are supported by paragraphs [0114], [0116], [0117], and [0127] of the current Application, which state:

“[0114]           The present invention is the result of research conducted by the Applicant, and which has revealed that,

**unlike myopia, hypermetropia and astigmatism correction, in which laser ablation is aimed at eliminating second-order, i.e. cylinder and sphere, aberrations, presbyopia can be reduced by laser ablation of the cornea using a photoablative pattern which induces fourth-order, in particular positive spherical, ocular aberration.**

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“[0116] As a result, it has now been determined that, in losing accommodation power with age, **presbyopes lose the ability to induce spherical aberration.**

“[0117] The obvious conclusion to be drawn here is therefore the possibility of partly compensating for the loss of accommodation power of the presbyope by **inducing an increase in spherical aberration.**

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“Since, as stated, combining an **increase in spherical aberration with high-order aberration treatment** produces a significant improvement in near vision, the photoablative pattern so generated is further modified to also take corrections of higher than second-order aberrations into account (block 70).” (emphasis added).

Thus the current Application fully supports the amendments to Claims 18, 25, and 32.

## **V. OBJECTIONS TO THE DRAWINGS**

On page 2 of the current Office Action, the Examiner objects to Figs. 2, 11, 13a-17. These objections are respectfully traversed and believed overcome in view of the following discussion.

### **A. Figs. 2 and 11**

The Examiner objects to Figs. 2 and 11 as containing numbers that are faded and spots. However, both figures are legible and their information is discernable.

In addition, the spots in Fig. 2 actually assist in understanding the figure, as they show how the cornea A (having spots), is separate from the aqueous humor B (no spots), which is in turn separate from the crystalline lens C (having spots), which is in turn separate from the vitreous body D (no spots). In addition, the numbers and letter in Fig. 2 are completely legible. Therefore, Applicant respectfully asserts that Fig. 2 is in acceptable form.

Further, while there are some spots in the table of Fig. 11, the information contained there in is completely legible and discernable, and is therefore completely acceptable. However, in an effort to provide Examiner with a clearer version of Fig. 11, Applicant has herewith submitted a Replacement Sheet in Appendix A, providing a clearer version of Fig. 11. Accordingly, Applicant respectfully asserts that Fig. 11 is now in acceptable form.

**B. Figs. 13a and 13b**

Applicant has herewith submitted a Replacement Sheet in Appendix A, providing a clearer version of Figs. 13a and 13b, which have labeled axis and no unwanted spots. Support for the labels on the axis can be found in paragraph [0057] of the current Application, which states:

“[0057] More specifically, a homogeneous-profile (top hat) beam, with equal amounts of energy at the centre and periphery, removes a homogeneous amount of tissue, whereas a Gaussian-profile beam removes more tissue at the centre than at the periphery of the impact area.”

Accordingly, Applicant respectfully asserts that Figs. 13a and 13b are now in acceptable form.

**C. Figs. 14-17**

Examiner asserts that Figs. 14-17 have no elements labeled and contain elements that are barely discernable. For instance, the examiner asserts that the image of the person in Figs. 14-16 has no outline and blends in with the background.

Applicant notes that there is no “person” in any of figures 14-16. Rather, these figures show the way an image is formed on various types of eyes (i.e., hypermetropic, myopic, and astigmatic respectively). As such, Examiner’s objection is confusing, and possibly misplaced.

In addition, Figs. 14-16 are discussed in detail in paragraphs [0065]-[0067], [0072]-[0073], and [0079], respectively, as well in the paragraphs surrounding the ones specifically mentioned. As such, it is clear from the Figs. 14-16 that the vertical arrows refer to the locations of the focal points of the respective image beams in the various types of

eyes. Accordingly, Applicant respectfully asserts that Figs. 14-16 are clear enough as they are, and require no further labels.

Moreover, Fig. 17 shows images breaking down the generic aberrations into second- and higher-order components. While the images may not be the clearest images ever produced, they are certainly clear enough to be understood. Further, they are in fact labeled (i.e., "Overall Wavefront Aberration", "Sphera", "Cylinder", and "Higher Order Aberrations"). Further, the images of Fig. 17 (being images and not drawings) are the best quality images that are available. Since the images of Fig. 17 are the best available, and they are certainly clear enough to be understood by one of ordinary skill in the art in view of the disclosure of the Specification, Applicant respectfully asserts that Fig. 17 is in acceptable form.

For all of the foregoing reasons, Applicant respectfully asserts that Figs. 14-17 are in acceptable form.

#### **D. Fig. 18**

Examiner asserts there is a misspelling of the word "defects" in box 20 of Fig. 18. Accordingly, Applicant has herewith submitted a Replacement Sheet in Appendix A, which corrects this typographical error. Accordingly, Applicant respectfully asserts that Fig. 18 is now in acceptable form.

#### **E. Conclusion**

For all the above reasons, Applicant respectfully asserts that Figs. 2, 11, and 13-18 are now in acceptable form. Therefore, Applicant respectfully requests Examiner withdraw the objection to Figs. 2, 11, and 13-18.

#### **VI. REJECTION OF CLAIMS 20, 27, AND 31 UNDER 35 U.S.C. § 112, SECOND PARAGRAPH**

On pages 2 and 3 of the current Office Action, the Examiner rejects Claims 20, 27, and 31 under 35 U.S.C. § 112, second paragraph, as being indefinite. These rejections are respectfully traversed and believed overcome in view of the following discussion.

As a preliminary matter, while the Examiner has rejected Claims 20, 27, and 31 as being indefinite, in the body of the rejection the Examiner additionally refers to

Claims 18, 25, 29, and 30. As discussed above, based on the discrepancy between the cited rejection and its actual discussion, it is unclear whether these rejections were intended to be made. However, for the sake of completeness, Applicant will address the Examiner's concerns regarding Claims 18, 25, 29, and 30, even though it is unclear whether these claims are in fact rejected as being indefinite.

**A. Claim 18**

The Examiner asserts that steps a2) and a3) involve calculations that must be performed but are not manipulative steps of the method. As such, Examiner asserts that it is unclear how steps a2) and a3) further modify the method.

These two steps describe how the overcorrect photoablative patter is obtained. While part of each step may be mathematical in nature, the entirety of each of steps a2) and a3) is not merely a calculation, but rather part of the method that results in obtaining an overcorrect photoablative pattern inducing positive spherical aberration. In fact, steps a2) and a3) are part of, and thus linked to, the step a) of controlling the excimer laser unit to produce on the cornea a photoablative pattern inducing a fourth-order ocular aberration. Thus, the manipulative steps a2) and a3) are tied to a device or element (i.e., part of controlling the excimer laser to produce an over correct photoablative pattern).

Accordingly, Applicant respectfully asserts that Claim 18 is clear and definite. Therefore, Applicant respectfully requests the Examiner withdraw any rejection of Claim 18 under 35 U.S.C. § 112, second paragraph, as being indefinite.

**B. Claims 20 and 27**

Examiner asserts that it is unclear how Claims 20 and 27 further limit the scope of the invention. Applicant has amended Claims 18 and 25 (from which Claims 20 and 27 depend, respectively), so that they only require that a spherical aberration is induced, resulting in an induced spherical aberration after treatment. As such, Claims 20 and 27 now clearly further limit the scope of the invention by requiring that the induced spherical aberration is a positive spherical aberration. Accordingly, Applicant respectfully asserts that Claims 20 and 27 are now clear and definite. Therefore, Applicant respectfully requests the Examiner withdraw any rejection of Claims 20 and 27 under 35 U.S.C. § 112, second paragraph, as being indefinite.

**C. Claim s 25, 27, and 29-31**

First, Examiner asserts that Claims 25, 27, and 29-31 do not positively recite a laser that can perform cornea ablation. Claim 25 stands currently amended to recite "An excimer laser unit which performs cornea ablation to reduce presbyopia...." As such, independent Claim 25 and dependent Claims 27 and 29-31 now positively recite a laser that can perform cornea ablation.

Second, Examiner asserts that the aberrometric measuring means, first photoablative pattern generating means, and second photoablative pattern generating means are inherent in the first control means of Claim 25. Therefore, Examiner asserts that it is unclear how these functional limitations necessarily impose structural limitations on the control means.

However, exactly how a control means is configured is **not** inherent. Rather, exactly how a control means operates is dependent upon how it is configured by its designer. In the case of the first control means of Claim 25, it must be configured so as to include aberrometric measuring means, first photoablative pattern generating means, and second photoablative pattern generating means, as specifically described and set forth in Claim 25. These additional components/configurations of the first control means of Claim 25 are **not** inherent. As such, they most certainly further limit the scope of Claim 25 from a situation in which they are not present in the claim language.

As an additional matter, Examiner also asks why the structure of Claim 25 is unique. Applicant respectfully note that the uniqueness of Claim 25 relates to it's novelty and non-obviousness. As such, any questions Examiner has regarding the uniqueness of Claim 25 should be addressed in a rejection of Claim 25 as being anticipated or rendered obvious, and **not** in a rejection under 35 U.S.C. § 112, second paragraph, as being indefinite.

For all of the reasons above, Applicant respectfully asserts that Claim 25 is definite, as are dependent Claims 27 and 29-31. Therefore, Applicant respectfully requests Examiner withdraw the rejection of Claims 25, 27, and 29-31 under 35 U.S.C. § 112, second paragraph, as being indefinite for including aberrometric measuring means, first photoablative pattern generating means, and second photoablative pattern generating means.



**D. Claim 31**

Examiner asserts that it is unclear why there is a need for a second control means for correcting higher order aberrations after inducing a 4<sup>th</sup> order aberration. As stated in Claim 24, one additional step in the method of Claim 18 is to control the excimer laser unit to form on the cornea a photoablative patter which **also corrects higher order aberrations**. Claim 31 is the corresponding claim in the set of product claims. As such, Claim 31 specifies that there is a second control means which controls the ecimer laser unit to form on the cornea a photoablative pattern which also corrects higher-order aberrations. As such, Applicant respectfully asserts that it is clear why a second control means is provided in Claim 31.

In response, Examiner asserts that it is unclear why a second control means is necessary to control the same laser unit. In particular, the Examienr asserts that one control unit can perform more than one step of controlling. However, just because one control means **can** perform more than one step of controlling, does not mean that one control means **must** perform more than one step of controlling. In the situation of Claim 31, a second control means is provided to perform the described task. While this second control means may be the same as the first control means, **this does not necessarily have to be the case**. As such, Applicant has recited a second control means in Claim 31. Just because a second control means is not **necessary** does **not** mean that a second control means makes Claim 31 **unclear**. There are many devices in the wolr that include elements which are **optional** to the functionality of the device. Inclusion of such optional elements certainly does not make those devices unclear. Similarly, the inclusion of the second control means in dependent Claim 31 (which is an optional element with respect to independent Claim 25), does **not** make Claim 31 unclear.

Accordingly, Applicant respectfully asserts that Examiner has failed to establish a prima facie case of indefiniteness of Claim 31. Therefore, Applicant respectfully requests Examiner withdraw the rejection of Claim 31 under 35 U.S.C. § 112, second paragraph, as being indefinite.

**VII. REJECTION OF CLAIMS 18, 20, 22-24, AND 32-34 UNDER 35 U.S.C. § 102(B)**  
**BASED ON WILLIAMS**

On page 7 of the current Office Action, the Examiner rejects Claims 18, 20, 22-24, and 32-34 under 35 U.S.C. § 102(b) as being anticipated by Williams. These rejections are respectfully traversed and believed overcome in view of the following discussion.

**A. Claims 18, 20, and 22-24**

Independent Claim 18 states, in part:

“a) controlling said excimer laser unit to produce on the cornea a photoablative pattern **inducing a fourth-order ocular aberration...**” (emphasis added).

As such, the method of Claim 18 actually **induces** a fourth-order ocular aberration. Examiner asserts that Williams discloses the above language of Claim 18. This, however, misinterprets the teachings of Williams.

In particular, Williams states:

“The corneal topography approach has a drawback in that **only measurements of the cornea are used**. However, the eye is a complex optical system of which the cornea is **only one component**. Thus, even corneal topography information when combined with the current FDA-approved refraction equation, is **not capable of suggesting what correction must be made to the corneal shape in order to optimally correct the overall aberration of the eye's optical system**.

“There have been several recent approaches to the above problems. First, by **expanding the mathematical equations for refraction correction to include higher order effects, coma (3<sup>rd</sup> order) and spherical (4<sup>th</sup> order) aberrations can be reduced**. See C. E. Martinez, R. A. Applegate, H. C. Howland, S. D. Klyce, M. B. McDonald, and J. P. Medina, ‘Changes in corneal aberration structure after photorefractive keratectomy,’ Invest. Ophthalmol. Visual Sci. Suppl. 37, 933 (1996). Second, by **improving schematic model eyes to include higher order aberrations, these new models can provide insight into how the various elements of the eye optical system correlate to affect visual performance. ...**

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“It is therefore an **object** of the invention to provide a system and method for laser ablation or reshaping of the eye which **considers higher order aberrations of the eye.**”

Williams, Col. 2, Ln. 66 – Col. 3, Ln. 18; Col. 3, Lns. 40-43 (emphasis added).

As such, the system and method of Williams merely **considers** that higher order aberrations of the eye so that spherical (4<sup>th</sup> order) aberrations **can be reduced**. Nowhere does Williams ever teach or suggest that a fourth-order ocular aberration should be **induced**, as stated in Claim 18. Thus, Williams fails to disclose this language of Claim 18.

In response, Examiner admits that Williams does not describe its corrective approach in terms of inducing aberrations. Rather, Examiner asserts that the correction of a fourth-order aberration **requires** the induction of at least an equal (in absolute value) and opposite one.

However, this statement by the Examiner **contradicts** the direct teachings of Williams. In particular, as cited above, Williams explicitly states that “even corneal topography information when combined with the current FDA-approved refraction equation, is **not capable of suggesting what correction must be made** to the corneal shape in order to optimally correct the overall aberration of the eye’s optical system.” Williams, 3, Lns. 2-6 (emphasis added). Since the correction which must be made is **not** suggested, it is implausible for Examiner to assert that a fourth-order aberration **requires** the induction of at least an equal (in absolute value) and opposite one without any additional support whatsoever. As such, Applicant respectfully assert that Examiner’s unsupported statement **cannot** support an anticipation rejection of Claim 18.

In addition, the above statement by the Examiner appears to be one of official notice, rather than a statement which is supported by the teachings of Williams. In fact, all that Williams teaches is that an **object** of the invention to provide a system and method for laser ablation or reshaping of the eye which **considers** higher order aberrations of the eye. Thus, Williams fails to support examiners above statement that a fourth-order aberration **requires** the induction of at least an equal (in absolute value) and opposite one.

As such, the current rejection of Claim 18 appears to be one more of obviousness rather than anticipation. Accordingly, Applicant respectfully asserts that if Examiner is to maintain his assertion that the correction of a fourth-order aberration **requires** the induction of at least an equal (in absolute value) and opposite one, he **must** provide a reference which qualifies as prior art and adds support to the currently unsupported statement. In other words, Examiner’s rejection, as it currently stands, is deficient for being unsupported.

In addition, Claim 18 also states, in part:

“A method of controlling an excimer laser unit to perform cornea ablation to **reduce presbyopia...**” (emphasis added).

Williams fails to teach or suggest any method of performing ablation to reduce **presbyopia**. Rather, (with regard to Claim 25 and Bille) Examiner asserts that “astigmatic disorders” (which Examiner interprets the system of Bille as treating) includes presbyopia.

However, presbyopia is **not** an astigmatic disorder, but rather a loss of the ability to focus especially on near objects. Thus, the two conditions are different. This can be seen by the Wikipedia article describing presbyopia

(<http://en.wikipedia.org/w/index.php?title=Presbyopia&oldid=343171465>) included in

Appendix B, and the Wikipedia article describing astigmatism

([http://en.wikipedia.org/w/index.php?title=Astigmatism\\_\(eye\)&oldid=345746889](http://en.wikipedia.org/w/index.php?title=Astigmatism_(eye)&oldid=345746889))

included in Appendix C. In fact, paragraphs [0085], [0087], and [0091] of the current Application even explain the differences:

“[0085] **Correction of myopia, hypermetropia and astigmatism** is based on laser ablation techniques employing photoablative patterns designed to eliminate the cylinder and sphere, i.e. to **eliminate second-order aberrations**.

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“[0087] **Higher-order aberrations are normally left unchanged**. More specifically, **third-order aberrations** are normally associated with “coma” visual defects, while **fourth-order aberrations**, and particularly the spherical aberration measured by the coefficient of Zernike's polynomial  $Z_{sub.4.sup.0}$ , are partly related to transient accommodation phenomena.

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“[0091] **Presbyopia**, on the other hand, is a visual defect which consists in diminished accommodation power of the eye to focus on near objects, is mainly encountered in adults, and is due to a loss of elasticity of the crystalline lens. **Unlike myopia, hypermetropia and astigmatism**, presbyopia is therefore not a refractive defect and, unlike the cases described above, is not easy to solve using photoablative techniques.” (emphasis added).

Thus, not only is presbyopia different from astigmatism, but astigmatism relates to second-order aberrations, while Claim 18 specifically requires inducing a **fourth-order** ocular aberration.

Further, neither Bille nor Williams ever even refer to presbyopia, let alone describe an excimer laser that performs cornea ablation to reduce presbyopia, as required by Claim 18.

Moreover, amended independent Claim 18 also states, in part:

“a2) if the detected spherical aberration is negative, increasing it numerically in absolute value to obtain an overcorrect photoablative pattern inducing spherical aberration, **resulting in an induced spherical aberration after treatment**;

“a3) if the detected spherical aberration is positive, changing its sign and increasing it numerically in absolute value to obtain an overcorrect photoablative pattern inducing spherical aberration, **resulting in an induced spherical aberration after treatment**; and....” (emphasis added).

As such, it is now clarified that Claim 18 requires there to be an induced spherical aberration **after treatment**. As explained above, Williams relates to modifying the corneal shape in order to optimally **correct the overall aberration** of the eye's optical system. Williams, Col. 3, Lns. 2-6. In other words, Williams **tries to reduce** the aberrations of the eye, after treatment, to **zero**. This is the same teaching as that of Bille (i.e., result in zero aberrations after treatment). Such a teaching is very **different** from the method of Claim 18, where an overcorrect photoablative pattern is used to induce spherical aberration, **resulting in an induced spherical aberration after treatment**.

Accordingly, for all the reasons above, Applicant respectfully asserts that Examiner has failed to establish a prima facie case of anticipation of independent Claim 18, and corresponding Claims 20 and 22-24 because they are all ultimately dependant from independent Claim 18. Therefore, Applicant respectfully requests that Examiner remove the rejection of Claims 18, 20, and 22-24 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,394,999 to Williams et al.

#### **B. Claims 32-34**

Similarly to Claim 18, amended, independent Claim 32 states:

“A method of **reducing presbyopia**, comprising the step of:

“forming on the cornea a photoablative pattern **inducing a fourth-order ocular aberration**, resulting in a fourth-order ocular aberration **after treatment**.”  
(emphasis added).

As discussed above, Williams fails to teach actually **inducing** a fourth-order ocular aberration. Rather, Williams merely **considers** that higher order aberrations of the eye so that spherical (4<sup>th</sup> order) aberrations **can be reduced**. Nowhere does Williams ever teach or suggest that a fourth-order ocular aberration should be **induced**, as stated in Claim 32. Thus, Williams fails to disclose this language of Claim 32.

Also as discussed above, if Examiner is to maintain his assertion that the correction of a fourth-order aberration **requires** the induction of at least an equal (in absolute value) and opposite one (an assertion wholly unsupported by any of the currently cited art), then he **must** provide a reference which qualifies as prior art and adds support to the currently unsupported statement. In other words, Examiner's rejection, as it currently stands, is deficient for being unsupported.

Furthermore, Claim 32 is a method of **reducing presbyopia**. However, as discussed above in relation to Claim 18, presbyopia is **different** from astigmatism, and neither Bille nor Williams ever even mentions presbyopia (let alone a method of reducing presbyopia as required by Claim 32).

Moreover, as with Claim 18, Claim 32 has been amended to clarify that there must be a resultant fourth-order ocular aberration **after treatment**. As explained above, Williams relates to modifying the corneal shape in order to optimally **correct the overall aberration** of the eye's optical system. Williams, Col. 3, Lns. 2-6. In other words, Williams tries to **reduce** the aberrations of the eye, after treatment, to **zero**. This is the same teaching as that of Bille (i.e., result in zero aberrations after treatment). Such a teaching is very **different** from the method of Claim 32, where an overcorrect photoablative pattern is used to induce a fourth-order ocular aberration, **resulting in a fourth-order ocular aberration after treatment**.

Accordingly, Applicant respectfully asserts that Examiner has failed to establish a prima facie case of anticipation of independent Claim 32, and corresponding Claims 33 and 34 because they are all ultimately dependant from independent Claim 32.

Therefore, Applicant respectfully requests that Examiner remove the rejection of Claims 32-34 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,394,999 to Williams et al.

**VIII. REJECTION OF CLAIMS 25, 27, AND 29-31 UNDER 35 U.S.C. § 102(B)**  
**BASED ON BILLE**

On page 7 of the current Office Action, the Examiner rejects Claims 25, 27, and 29-31 under 35 U.S.C. § 102(b) as being anticipated by Bille. These rejections are respectfully traversed and believed overcome in view of the following discussion.

Similarly to Claim 18, amended, independent Claim 25 states, in part:

“An excimer laser unit for performing which performs cornea ablation to **reduce presbyopia**, comprising:

“a) first control means for controlling said excimer laser unit to form on the cornea a photoablative pattern **inducing a fourth-order ocular aberration**;

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a2) first photoablative pattern generating means which are activated, if the detected spherical aberration is negative, to numerically increase in absolute value the spherical aberration detected by said aberrometric measuring means, and so generate a photoablative pattern inducing spherical aberration, **resulting in an induced spherical aberration after treatment**;

a3) second photoablative pattern generating means which are activated, if the detected spherical aberration is positive, to change the sign of and numerically increase in absolute value the spherical aberration detected by said aberrometric measuring means, and so generate a photoablative pattern inducing spherical aberration, **resulting in an induced spherical aberration after treatment...**”  
(emphasis added).

As such, Claim 25 requires that the excimer laser (1) performs cornea ablation to **reduce presbyopia**, (2) actually **induces** a fourth-order ocular aberration, and (3) results in **an induced spherical aberration after treatment**. As discussed above in relation to Claim 18, Williams **fails** to disclose all of these elements of Claim 25.

Examiner has withdrawn the prior rejection of Claim 25 as being anticipated by Williams, and now newly asserts that Claim 25 is anticipated by Bille. However, Bille is just as deficient as Williams at disclosing the above language of Claim 25.

More specifically, even under Examiner's interpretation of Bille, the system of Bille only treats astigmatic disorders. As explained above in relation to Claim 18, astigmatism is very different from presbyopia. In fact, Bille, as Williams, **never** even mentions presbyopia. For this reason alone, Bille fails to anticipate Claim 25.

In addition, Examiner has completely failed to indicate any portion of Bille whatsoever that actually discloses any element (inherent or otherwise) which controls an excimer laser to form on the cornea a photoablative pattern that actually **induces a fourth-order ocular aberration**. Rather, all that Bille discloses is a method and apparatus which can be used to **determine** higher order refractive error (aberrations) such as spherical (i.e., fourth order) aberration. Bille, Col. 4, Lns. 5-23 (cited by Examiner). This does not mean that a fourth-order ocular aberration is actually **induced**.

Moreover, Bille teaches to **reduce** the aberrations of the eye after the treatment to **zero**. As discussed above in relation to Claim 18, such a teaching is very **different** from the apparatus of Claim 25, which induces spherical aberration, **resulting in an induced spherical aberration after treatment**.

Accordingly, for all the reasons above, Applicant respectfully asserts that Examiner has failed to establish a prima facie case of anticipation of independent Claim 25, and corresponding Claims 27 and 29-31 because they are all ultimately dependant from independent Claim 25. Therefore, Applicant respectfully requests that Examiner remove the rejection of Claims 25, 27, and 29-31 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,155,684 to Bille et al.

**IX. REJECTION OF CLAIM 23 UNDER 35 U.S.C. § 103(A) BASED ON WILLIAMS IN VIEW OF MARTINEZ**

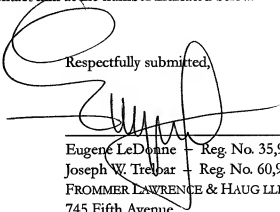
On page 7 of the current Office Action, the Examiner rejects Claim 23 under 35 U.S.C. § 103(a) as being unpatentable over Williams in view of Martinez. These rejections are respectfully traversed and believed overcome in view of the following discussion.



Claim 23 is ultimately dependent from independent Claim 18. As Claim 18 is allowable, so must be Claim 23. Accordingly, Applicant respectfully asserts that Examiner has failed to establish a prima facie case of obviousness of Claim 23. Therefore, Applicant respectfully requests that Examiner remove the rejection of Claim 23 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,394,999 to Williams et al. in view of the article to Carlos E. Martinez et al., "Effect of Pupillary Dilation on Corneal Optical Aberrations After Photorefractive Keratectomy", Archives of Ophthalmology, Vol. 116, PP. 1053-1062 (August 1998).

Based upon the above remarks, Applicant respectfully requests reconsideration of this application and its early allowance. Should the Examiner feel that a telephone conference with Applicant's attorney would expedite the prosecution of this application, the Examiner is urged to contact him at the number indicated below.

Respectfully submitted,



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# Appendix A

## Replacement Drawings